

## Special Issue

# Additive Manufacturing for Advanced Thermal Management and Cooling Applications

### Message from the Guest Editors

Additive manufacturing (AM) is revolutionizing the design and fabrication of advanced thermal management systems by providing unprecedented geometrical freedom, lightweighting capability, and material efficiency. This Special Issue aims to present recent advancements in metal AM technologies—such as laser powder bed fusion (LPBF), directed energy deposition (DED), and binder jetting (BJ)—for high-performance cooling and heat dissipation applications. Topics of interest include the design, modeling, and fabrication of lattice-structured and topology-optimized heat exchangers, conformal cooling channels, and multifunctional components for electronics, aerospace, and energy systems. Particular attention will be given to studies integrating AI-driven design optimization, process monitoring, and digital twin technologies to achieve predictive thermal performance and defect control. Through this Special Issue, we intend to provide a comprehensive overview of emerging trends, experimental validations, and numerical approaches that accelerate the development of compact, efficient, and intelligent thermal management solutions enabled by additive manufacturing.

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### Guest Editors

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## Applied Sciences

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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### Editor-in-Chief

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